REMARKS

Claims 1-12 and 16 have been canceled. Claim 17 is canceled in this amendment.

Claims 13-15 and 18-32 are currently pending in the present application.

Claim 13 has been amended to include the open language "comprising," by reciting that the pH is at most 5 and by indicating that the polymer solution of section a) is stable. Support for the amendments can be found in claim 17, which has now been canceled, and in the Specification on page 6, line 18.

No new matter has been added by way of the present claim amendments.

Specification

The Examiner has objected to the Specification as containing an incorrect spelling throughout the text of the term "alpha" in "poly-alpha-hydroxacrylic acid." Applicants submit herewith a Substitute Specification to correct these informalities, thereby overcoming the objection.

Claim Objections

The Examiner states that claim 1 is objected to for an incorrect spelling of the term "alpha." Applicants note, however, that claim 1 had been canceled. Applicants assume that the Examiner intended to identify claim 13 and have corrected the spelling of the term "alpha" in that claim, thereby overcoming the objection.

Rejections under 35 U.S.C. §103

DE 3,423,452 (Fornelli)

The Examiner has rejected claims 13-15 and 17-32 as obvious over DE 3,423,452 (Fornelli). The Examiner's full comments are not repeated here, but can be found on pages 4-7 of the Office Action. The Examiner states that he has relied upon the esp@cenet German to English machine translation of Fornelli and contends that Fornelli discloses a cellulose containing fiber with a polymer solution consisting of both polyers/copolymers of acrylic acid, maleic acid and methacrylic acid and of polymers of poly-alpha-hydroxyacrylic acid. The Examiner acknowledges, however, that it is unclear from the machine translation whether additional

components are optional. The Examiner also acknowledges that Fornelli does not disclose a washing step between the treatment step and the subsequent hydrogen peroxide bleaching step or how the polymers/copolymers of acrylic acid, maleic acid, and methacrylic acid are made prior to mixing with polymers of poly-alpha-hydroxyacrylic acid or adding calcium or magnesium to the bleaching process.

As a preliminary matter, Applicants have canceled claim 17, thereby obviating the rejection based on that claims.

Applicants next note that the Fornelli reference was cited in the PCT Search Report as an A category reference, which defines the general state of the art but which is not considered to be of particular relevance.

Applicants also note that while components (A) (i.e. poly-alpha-hydroxyacrylic acid or a salt thereof) and (B) (i.e. a homopolymer of acrylic acid or methacrylic acid or a copolymer of acrylic acid with methacrylic acid, acrylamide, methacrylamide, acrylonitrile, methacrylonitrile, acrylic acid ester, methacrylic acid ester or other ethylenically unsaturated mono- or dicarboxylic acids and/or a copolymer of maleic acid and styrene, maleic acid and a vinyl ester of maleic acid and a vinyl ether (see page 4)) are required, the other components (C) and (D) are optional (page 6, lines 11-13).

Fornelli is silent in respect of the pH of the stabilizing mixture. However, it is obvious that the mixture is alkaline. For example, the polymer solutions described in Examples 1 and 2 (page 10) contain urea. Aqueous solutions of urea are alkaline. Urea is an example of component (D) (see page 6, lines 27-31). Additionally, Examples 1 and 2 use polylactone. It is known that the polylactone itself is acidic and insoluble in water. The polyactone can be dissolved in alkali to form poly-alpha-hydroxyacrylic acid (see enclosed Material Safety Data Sheet for polylactone; Physical/Chemical Properties on page 3). As aqueous solutions are prepared in Examples 1 and 2, it is evident that the solutions are alkaline, otherwise the polylactone would not be dissolved.

Additionally, another important distinguishing feature is that Fornelli discloses adding te stabilizing mixture into a bleaching liquor containing hydrogen peroxide (see page 7, lines 16-20, and claim 4). Contrary to the instant invention, Fornelli does not disclose or suggest first

adding a stabilizing polymer solution to a cellulosic fibre material, and then adding a peroxide compound and an alkaline substance and carrying out the bleaching.

Futhermore, Fornelli states that the poly-alpha-hydroxyacrylic acid can also be in the form of a polylactone, which can be hydrolyzed and neutralized (see page 4, last paragraph). The Examiner seems to have interpreted this as meaning that the poly-alpha-hydroxyacrylic acid is only optionally neutralized; that is acidic before neutralization). But it is unclear how the Examiner comes to this conclusion.

More importantly, Fornelli discloses a peroxide bleaching process wherein the material to be bleached is treated with a bleaching liquor containing the stabilizing mixture (claims 4). The Examiner's argument (see page 4 of the Office Action, second sentence of the last paragraph) that Fornelli claims that subsequent to claim 4 the cellulose is treated with a silicate free hydrogen peroxide is not correct; the cellulose is already treated with peroxide in claim 4. A more accurate English translation of claims 4 and 5 is set forth below:

> 4. *A process for bleaching cellulose-containing textile materials with peroxide, characterized in that the materials are treated with a bleaching liquor containing a stabilizing mixture of claim 1.*
>
> 5. *The process of claim 4, characterized in that the cellulose-containing textile materials are treated with a silicate-free hydrogen peroxide bleaching liquor containing a stabilizing mixture of claim 1.*

This means that Fornelli only teaches one single process step and there is therefore no intermediate washing step.

The Examiner also refers to the Reference example 1 on page 11 of the instant Specification, referring to this as "AAPA" ("Applicant's Admitted Prior Art") and states on page 5, lines 6-7 of the Office Action "The AAPA discloses that the polymers formed by radical polymerization have a pH of about 4." The Examiner concludes that it would be obvious to apply

this known technique to the teachings of Fornelli (see page 5, last full paragraph). Unfortunately the Examiner appears not to have read the entire Reference example.

Reference example 1 sets forth that the polymers formed by conventional radical polymerization **initially** had a pH of about 4 (emphasis added), but Reference example 1 then states that the pH of the polymer solution was adjusted to 8 using sodium hydroxide. In other words, **the pH adjustment is part of the conventional technique**. Therefore the Examiner's argument that it would have been obvious to the skilled artisan to use conventional techniques to obtain the instant invention is based on an erroneous understanding of what the conventional technique is.

Additionally, referring to page 6, lines 20-26 of the present Specification it is set forth that the "raw" polymer obtained from the homopolymerization or copolymerization has an acidic pH (corresponds to the pH of 4 in Reference example 1). By following conventional techniques this "raw" polymer would then be treated with alkali, such as sodium hydroxide. According to one embodiment of the present invention the acidic "raw polymer is used (see claims 18-20).

To summarize, in the broadest reading of Fornelli, the stabilizing mixture only contains component (A) and component (B). As set forth above, the polymer or copolymer (component (B)) would, according to the "AAPA" relied upon by the Examiner have a pH of about 8 The other compounet (A) also seems to be alkaline or neutral. Component (A) can be polylactone which, as set forth above, must be treated with alkali in order to be brought into the aqueous solution.

Thus, the skilled artisan would have used a pH value in the alkaline range when forming the stabilizing solution of Fornelli. Consequently, Applicants request removal of the rejection.

Nishino et al. (alone and in combination)

The Examiner has rejected claims 13, 17-26 and 29-32 as obvious over US Patent 6,120,556 (Nishino). He has also rejected claims 14, 15 and 17 as obvious over Nishino in view of USP 4,238,282 to Hyde (hereinafter "Hyde"), and claims 27 and 28 as obvious over Nishino in view of USP 6,444,771 to Yamaguchi et al. (hereinafter "Yamaguchi"). The Examiner's comments appear on pages 7-15 of the Office Action and are not repeated here. To summarize, it

appears that the Examiner's stand is that the claim amendment of May 4, 2009 (defining that the polymer solution consists of the first polymer (A) and the second polymer (B), and that the peroxide bleaching step (b) is carried out essentially immediately after the addition of the polymer solution to the cellulosic fibre material without a washing step between steps (a) and (b)) do not make the instant invention non-obvious. Applicants respectfully traverse.

As a preliminary matter, Applicants have canceled claim 17, thereby obviating the rejections based upon this claim.

The Examiner's argument that the Applicant's claimed time interval falls within the two bounds of Nishino is not sound because Nishino is dealing with two different modes of treatments; that is (1) in the form of a bleaching solution containing the polymer solution + peroxide + alkali, and (2) in the form of a pretreatment with a polymer solution for a certain time period, optionally followed by washing, and then followed by bleaching with peroxide at alkaline conditions.

The first treatment comprises one step wherein the polymer solution and the peroxide and alkali are added simultaneously and thus there is **no time interval**. The Examiner's argument is based on hindsight.

Applicants have already demonstrated in the present application that the solution of Example 1, having a pH of 4.8, gave a stable solution whereas Example 3 demonstrated that when the pH was raised from 4.7 to 6.4 a less satisfactory result was obtained. It is reasonable, however, that the result for pH 6.4 also applies to pH 6. Applicants submit that in view of the amendment to claim 13, the existing examples demonstrate an unexpected effect.

In respect of the pretreatment, the pH of 6 is not disclosed as a more preferred pH value as argued by the Examiner on page 14 of the Office Action. On the contrary, the pH in the pretreatment is from 6 to 11, **more preferably from 8 to 10** (column 9, lines 19-22). Nishino also states that the pretreatment procedure is carried out at a pH value of 6 to 11, **more preferably at a pH value of 7 to 10.5** (column 9, lines 43-46). It is believed that Nishino prefer higher pH values because the adjustment of the pH in the alkaline peroxide stage (usually at least pH 10) would then require less alkali. Thus, Applicants submit that the pH values of 7 and 8 are far away from the highest pH value of 5 of the amended claims.

The Examiner argues on page 14 of the Office Action that in experiment 14 of the Nishino reference EDTMP is combined with PHAS and SPA4, but not with SPA1 or SPA2, and therefore it cannot be concluded that EDTMP is poorly performing since no experiment was conducted with EDTMP, SPA1 and PHAS together. However the notation "SPA4" in Table 1 is a misprint which should have read SPA1. This is evident in part because SPA4 is not defined in the list of abbreviations occurring immediately below Table 1 and also because Table 1 of the corresponding European publication (EP 0 814 193 A2; enclosed) lists SPA1 in this position. The drawbacks of using nitrogen-containing chelating agents are discussed on page 3, lines 19-28 of the instant Specification.

Applicants therefore request removal of the obviousness rejections.

Interview Requested

Applicants hereby formally request a telephone interview with the Examiner to discuss the application in order to move prosecution forward more efficiently and effectively.

Conclusion

All of the claims are submitted as defining non-obvious, patentable subject matter. Reconsideration of the rejections and allowance of the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application and to schedule an Interview, the Examiner is respectfully requested to contact Susan W. Gorman, Reg. No. 47,604, at the telephone number of the undersigned below to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: November 19, 2009

Respectfully submitted,

#47,604

By _____

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Enclosures: Material Safety Data Sheet for Polylactone
Table 1 from EP 0 814 193 A2
Substitute Specification – with markings
Substitute Specification – without markings

MATERIAL SAFETY DATA SHEET

Manufacturer Information

Company:	Nippon Peroxide Co., Ltd.
Address:	Kouwa Nishiguchi Bldg., 66-2,
	Horikawa-cho, Saiwai-ku,Kawasaki, Japan
Division:	Business Division
Telephone:	044-542-9531
Fax:	044-542-9560
Emergency call:	044-542-9531 or 024-941-0060

Date Prepared: July 20, 1995

No.PLC-0702 Revised: March 9, 2001

1.CHEMICAL PRODUCT

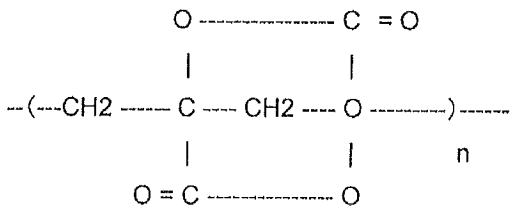
Product Name: PLAC

2.COMPSITION/INFORMATION ON INGREDIENTS

1) Chemical Name: Poly (1,3:3,1-Tetramethylenbiscarblacton) hydrate

2) Content: Solid Material: 55-75wt%

3) Constitutional Formula:



4) Reference No. in Gazetted List in Japan:

(6)-1850 (Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances)

(9)-503 (Labor and Health law)

5) CAS No.: 56385-15-0

6) UN Class: Not classified

7) Law concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management: Not applicable

8) Labor and Health law: Not applicable

3. HAZARDS IDENTIFICATION

Class Name of Hazardous Chemicals for MSDS in Japan:

Not applicable.

Adverse Human Health Effects: Irritating to eyes and skin. Possibly hazardous if ingested.

4. FIRST-AID MEASURES

Eye Contact: Immediately flush with water for at least 15 minutes and call a physician.

Skin Contact: Immediately wash with water and soap. Call a physician if any abnormality is observed.

Ingestion: Immediately rinse mouth with water. Drink water or milk and call a physician.

Inhalation: Remove to fresh air quickly. Rinse mouth thoroughly with water if necessary. Call a physician if any abnormality is observed.

5. FIRE-FIGHTING MEASURES

Fire Fighting Instructions: Wear protective equipment and position yourself upwind from fire.

As this product contains water , it does not directly burn unless the water completely evaporates. If the water evaporates, it needs to move this product from the Fire area to a Safety area.

Extinguishing Media: Water; Foam; Dry chemical powder; or Carbon dioxide

6. ACCIDENTAL RELEASE MEASURES

Collect and dispose of by burning.

Wear protective equipment in dealing with spill.

7. HANDLING AND STORAGE

Handling:

- Wear protective equipment to avoid contact with eyes or skin.
- Wash hands, face, etc. thoroughly with water after handling.
- Prevent the powder from scattering.
- Don't usually use fire near the place where they deal with this product.

Storage:
- Avoid direct sunlight and store at normal temperatures.
- Protect container against physical damage.
- As it is a slightly alkaline product with metal chelating effect, it should be stored in original container, or any other container or tank made of a material that will not cause corrosion or metal dissolution, such as plastic or stainless steel.
- Store except for usage, keeping this product close up.
- Prevent foreign substances from mixing into this product.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control Parameters:	Not established.
Exposure Guidelines:	Japan Association of Industrial Health: Not established; ACGIH: Not established.
Engineering Measures:	Provide the exhaust equipment in the area where the powder causes. Provide emergency shower and eye washing equipment in the work area, and clearly indicate the locations of the equipment.
Personal Protective Equipment:	Wear safety glasses, rubber gloves, rubber apron, rubber boots, etc.

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance, etc.:	white - Light yellow powder
Boiling Point:	---
Volatile Point:	Not volatile.
Melting Point:	----- (at 271°C resolve)
pH:	3 - 4 (1% solution)
Viscosity:	-----
Solubility:	Almost insoluble in water
Specific gravity:	1.61 (20°C)

- When this product is soluble in alkali; NaOH etc., this product forms poly-α-hydroxyacrylate.

10. DANGER INFORMATION

Flash Point: ---- (at 275℃, smoke and form charcoal.)

Oxidization: Not oxidizing.

Self-reactivity / Explosiveness: Stable under normal handling conditions.

11. TOXICOLOGICAL INFORMATION

Irritation: Irritating to eyes and skin.

Acute Toxicity: Oral (rat) LD50
>10.000mg (effective ingredient) / kg;
Inhalation (rat) LC50
>5.9mg (effective ingredient) / l

Chronic Toxicity: None proven.

Sensitization: No sensitization (cavy).

Mutagenicity: Negative in the test with Salmonella typhimurium (TA98, TA100, TA1535, TA1537, TA1538).

Carcinogenicity: None proven.

Reproductive Toxicity: None proven.

12. ECOLOGICAL INFORMATION

Bioaccumulation: Not bioaccumulatable.

Fish Toxicity: Acute toxicity: (Killifish) LC50 (48 hrs)
=590mg (effective ingredient) / l

13. DISPOSAL CONSIDERATION

Collect and dispose of by burning.

14. TRANSPORT INFORMATION

- When loading, check that container has no leak and prevent container from falling down, dropping or being damaged. Also, take precautionary measures to make sure that load does not collapse.
- Follow the "Handling and Storage" instructions above given.

15. REGULATORY INFORMATION

None of the following laws shall be applicable: Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances; the Industrial Safety and Health Law; Poison and Deleterious Substances Control Law; Law concerning Reporting,

etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management

16. OTHER INFORMATION

References: In-house materials of Nippon Peroxide Co., Ltd.

Disclaimer: This MSDS has been prepared based on currently available materials and information, but we make no warranties as to the accuracy or completeness of the data or information contained herein. The instructions and considerations given herein are for normal handling. For special handling, please take appropriate safety measures and carry them out according to the particular use.

Table 1

		Components								Concentration of stabilizing agent in test solution	pH value of test solution	Stability of H_2O_2
		A		B		C		D				
		Type	Amount (Part by weight)	Type	Amount (Part by weight)	Type	Amount (Part by weight)	Type	Amount (Part by weight)	(mg/liter)		(%)
Example	1	PHAS	10	SPA1	45	DTPA	45	-	-	800	11.0	77.6
	2	PHAS	20	SPA1	40	DTPA	40	-	-	800	11.0	78.2
	3	PHAS	20	SPA1	40	DTPA	40	-	-	800	10.0	68.9
	4	PHAS	20	SPA1	40	DTPA	40	-	-	600	9.0	92.7
	5	PHAS	20	SPA1	40	DTPA	40	-	-	600	8.0	98.7
	6	Copolymer 1	20	SPA1	40	DTPA	40	-	-	600	11.0	73.3
	7	PHAS	20	Copolymer 2	40	DTPA	40	-	-	600	11.0	72.9
	8	PHAS	20	SPA1	40	TTHA	40	-	-	600	11.0	74.6
	9	PHAS	10	Copolymer 3	45	DTPA	45	-	-	600	11.0	73.6
	10	PHAS	20	Poly(Na maleate)	40	DTPA	40	-	-	600	11.0	71.8
	11	PHAS	20	Copolymer 4	40	DTPA	40	-	-	600	11.0	71.9
	12	PHAS	20	SPA2	40	DTPA	40	-	-	600	11.0	73.9
	13	PHAS	20	Copolymer 5	40	DTPA	40	-	-	600	11.0	71.8
	14	PHAS	6	SPA1	27	DTPA	27	$MgSO_1 \cdot 7H_2O$	40	800	11.0	78.9
	15	PHAS	6	SPA1	27	DTPA	27	$MgSO_1 \cdot 7H_2O$	40	800	10.0	78.8
	16	PHAS	7	SPA1	31.3	DTPA	31.5	$MgSO_1 \cdot 7H_2O$	30	800	10.0	77.4
	17	PHAS	6	Copolymer 2	27	DTPA	27	$MgSO_1 \cdot 7H_2O$	40	800	11.0	75.6
Comparative Example	1	PHAS	100	-	-	-	-	-	-	800	11.0	5.2
	2	PHAS	20	SPA1	80	-	-	-	-	1000	11.0	21.0
	3	-	-	SPA1	100	-	-	-	-	800	11.0	43.5
	4	-	-	SPA1	100	-	-	-	-	800	10.0	0.3
	5	-	-	- -	-	DTPA	100	-	-	800	11.0	8.2
	6	-	-	SPA1	50	DTPA	50	-	-	800	11.0	24.3
	7	PHAS	50	SPA1	50	-	-	-	-	800	11.0	24.3
	8	PHAS	40	-	-	DTPA	60	-	-	800	11.0	25.7
	9	-	-	-	-	-	-	$MgSO_4 \cdot 7H_2O$	100	800	11.0	11.2
	10	PHAS	10.9	SPA1	49.1	-	-	$MgSO_4 \cdot 7H_2O$	40	800	10.0	2.7
	11	-	-	SPA1	30	DTPA	30	$MgSO_4 \cdot 7H_2O$	40	800	11.0	12.3
	12	-	-	SPA1	50	EDTMP	50	-	-	800	11.0	35.6
	13	PHAS	20	SPA1	40	EDTA	40	-	-	800	10.0	20.2
	14	PHAS	20	SPA1	40	EDTMP	40	-	-	800	11.0	36.9